

REMARKS

Careful consideration has been given by the applicants to the Examiner's rejection of the application, as set forth in the outstanding Office Action, and favorable reconsideration and allowance of the application, as amended, is earnestly solicited.

Applicants note the Examiner's request for an amended Abstract of the Disclosure, noting, however, that an Abstract of the Disclosure, as amended, was submitted with the original specification and claims.

However, in order to meet the Examiner's requirements, applicants herewith submit a new Abstract of the Disclosure, which has been more closely conformed to the U.S. requirements, as requested by the Examiner.

Applicants further note the minor formal objection to Claim 7 and the present Amendment renders that particular rejection moot.

Furthermore, applicants note the Examiner's rejection of Claims 1-4 and 8 under 35 U.S. C. §102(b) s being anticipated by Prahauer, et al, U.S. Patent No. 4,838,167, as extensively detailed in the Office Action; and the rejection of Claims 5 and 7 as being unpatentable over Prahauer, as applied to Claim 1; Claim 6 as being unpatentable as applied to Claim 3; and Claim 9 as being unpatentable as applied to Claim 1.

However, upon careful consideration of the art, applicants respectfully submit that the present invention clearly and unambiguously provides patentable and distinctive features over Prahauer, et al. and that the latter is incapable of providing the type of operative effect, as attained by the present invention.

In order to obviate the rejection in view of Prahauer, et al., applicants have cancelled the claims currently on file without prejudice or disclaimer, and herewith present new Claims 10-13, which define the present fog projectile in more clear and precise terminology setting forth the distinctions over Prahauer, et al., as detailed hereinbelow.

In particular, reverting to Prahauer, et al. and in traverse of the applicability of that particular publication, applicants note that Prahauer, et al. discloses a projectile which subsequent to ejection or firing thereof, has the nine (9) pieces of individual cylindrical charges 18, which are arranged in a 3 by 3 side-by-side arrangement adapted to produce a generally spherical closed-in infrared cloud 12. In this connection, applicants note the discussion in the patent specification and Figure 1 of the drawings. This cloud, which is produced by the charges in Prahauer, et al., is closed-in itself, and sinks down from an elevation of approximately 100 to 200 meters above sea level.

The foregoing cloud 12, as described in Prahauer, et al., is produced by these nine pieces of individual charges 18. Every individual charge 18 contains the coated wound foils 14, as disclosed in Figure 2 of Prahauer, et al.'s drawings.

In contrast with the ejection of the individual charges 18 from the projectile 11 and the ignition of the coated foils 14 in Prahauer, et al., certain constructive distinctions relative to the present invention are set forth as follows:

In Prahauer, et al., for the ejection of the individual charges 18, there is required the central substance 20, the secondary ignition charge 25, the delay charge 27 and the ejection charge 26. The ignition of the foils 14 with the coatings 15 is effected by means of the secondary ignition charge 25. The combusting foils 14 evidence a high air resistance and are consequently

subsequent to the ejection thereof, they remain closely adjacent to each other and, consequently, build the compact cloud 12.

The containers 18 are an integral constituent of the projectile 11, whereby the projectile transports the containers to the intended location, as required. For the ejection and for the ignition of the foil 12, there are required four different pyrotechnic elements, and this forms the compact cloud.

In contrast with Prahauser, et al., pursuant to the present invention, and as also illustrated in Figure 7, no cloud is produced, but rather a fog curtain N is to be produced, which provides a significant distinction in the physical application of the fog projectile.

Essential ignition elements reside in the hollow-cylindrical segments 6, which are constituted of a pyrotechnic active composition or mass. In essence, this clearly indicates that the hollow-cylindrical segments 6 are solid, massive projectile bodies. They fly at different distances by fanning out and, consequently, build a presently sidewise-expanded fog curtain N. No compact spherical cloud is formed, as is the case in Prahauser, et al.

For the ejection and for the ignition, there is required the electrical ignition element 13 and the firing charge 3, in effect, only two pyrotechnic elements.

In order to achieve the foregoing effect, which is incapable of being attained by Prahauser, et al., the hollow-cylindrical segments 6 form a layer 5 and a hollow space 7 within the layer. This construction provides for a plurality of layers 5, which are directly superimposed on each other, and which form a stack with the through extending hollow space 7. The hollow-cylindrical elements 6, thus, consist of a pyrotechnic active mass, and for the collective hollow-cylindrical segments 6; a single ignition charge 3 is adequate.

A single combustible foil 8 encompasses the periphery of the stack which is constituted of the hollow-cylindrical element 6, and the end surface which is the top or leading end of the ejecting direction of the projectile. A disc which is preferably constituted of a pressed fiber material, covers the opposite end surface, which provides for the ignition charge 13.

The stack is fired and ejected from the projectile barrel 11, as shown in Figure 6, flies a distance S of approximately 5-10 meters, in contrast with a distance in Prahauser, et al. of 100 to 200 meters.

The hollow-cylindrical segments are ignited centrally from the interior through the hollow space, and due to the burning down or combustion of the foil, this eliminates the retaining effect of the foil so that the stack of the segments is fanned outwardly.

This, as described in the present specification, enables the immediate driving apart of the segments into a large surfaced fan configuration, which provides for the fog curtain N, and whereby the burning hollow-cylindrical segments are fanned out into a further spatial angle forming that particular fog curtain.

The outwardly flowing air thus, produces in the hollow space 7 within the hollow-cylindrical segments a higher pressure than at the circumference at the stack. Successively, the burning hollow-cylindrical segments 6 are radially fanned more distantly away from the stack 5, whereby initially the forward hollow-cylindrical segments are those at the sides towards the airborne body. Then they are followed the segments of the following layers 5.

In essence, the inventive fog curtain N is produced by means of a large surfaced fanning apart of the combusting hollow-cylindrical segments in a wide-spatial angle. The fog curtain extends itself in a wavy-linear shape and begins to form above the vehicle, which is to be protected, then sinks down in front of the vehicle and ends widely ahead of the vehicle in

proximity to the ground, thus, as illustrated in the drawings, the fog curtain N has a dual task, namely to protect the vehicle or target F against a first airborne body K1 and against a second airborne body K2, which attack from different elevations.

The cloud, which is produced in Prahauser, et al., does not fulfill this task, and only renders possible a defense against a single oncoming airborne body 11. Consequently, in the event that a plurality of airborne bodies is attacking, then for each airborne body there must be generated a different specified defensive clouds.

In contrast therewith, pursuant to the construction of the present fog projectile, the generated fog curtain N forms a protection against a single airborne body, as well as against concurrently attacking pluralities of airborne bodies.

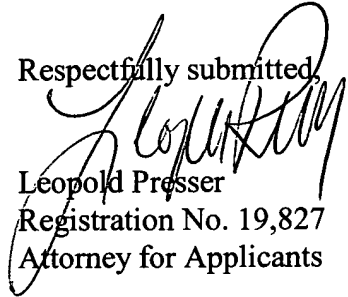
The important aspect produced by the present inventive construction is the compact stack 5, namely in the fog projectile member 1, this then only successively emits subsidiary ejecting components when the foil 8 has burned down, and, enables the fanning out of the hollow-cylindrical segments of the stack in order to produce the unique fog curtain N.

The cooperation of the inventive features, as now set forth in the new claims, which specifically elucidate the construction of the fog projectile, is not in any manner disclosed nor suggested in Prahauser, et al. nor in any other reference cited by the Examiner as technological background material.

In view of the foregoing comments and amendments, which are deemed to be fully responsive to the outstanding Office Action, and which sets forth unambiguously patentable features, the early and favorable reconsideration of the application and issuance of the Notice of Allowance by the Examiner is earnestly solicited.

However, in the event that the Examiner has any queries concerning the instantly submitted Amendment, applicants' attorney respectfully requests that he be accorded the courtesy of possibly a telephone conference to discuss any matters in need of attention.

Respectfully submitted,



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Enclosure: New Abstract of the Disclosure